SECTION C

This document covers thermostabilized eggs with turkey sausage and potatoes, packaged in a polymeric tray for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-E-011, EGGS WITH TURKEY SAUSAGE AND POTATOES, PACKAGED IN A POLYMERIC TRAY, SHELF STABLE

C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article or product demonstration model inspection as applicable, in accordance with the tests and inspections of Section E of this Performance-based Contract Requirements document.

B. Commercial sterility. The packaged food shall be processed until commercially sterile. Thermally processed product shall be free of swelling or microbial activity when tested in accordance with section E-5, B, (1) of this Performance-based Contract Requirements document.

C. Shelf life. The packaged product shall meet the minimum shelf life requirement of 36 months at 80°F.

D. Appearance.

(1) General. The product shall be eggs with turkey sausage and potato dices uniformly distributed throughout the product. The packaged food shall be free from foreign materials.

(2) Eggs. The color of the finished product shall be a typical yellow cooked egg color or slightly darker. The finished product shall be practically free of starch lumps, air pockets or void areas.

(3) Ground turkey sausage. The ground turkey sausage shall be of the size typically produced by a 1/2 inch plate machine setting. The ground turkey sausage shall be practically free of skin, bone or bone fragments, cartilage, coarse connective tissue, tendons or ligaments, and discolored meat. The sausage shall have a cooked ground turkey sausage color.

(4) Potatoes. The potatoes shall be dice sizes typically produced by a 3/8 by 3/8 by 3/8 or 3/4 inch dicer setting. The potato dices shall have a cooked potato color.

E. Odor and flavor. The packaged food shall have an odor and flavor of cooked eggs with turkey sausage and potatoes. The packaged food shall be free from foreign odors and flavors.

F. Texture.

(1) Egg. The egg product shall be moist, moderately soft, and shall not be rubbery.

(2) Ground turkey sausage. The ground turkey sausage shall be moist and tender.

(3) Potatoes. The potato dices shall be slightly soft to slightly firm.

G. Net weight. The average net weight shall be not less than 94 ounces. No individual polymeric tray shall have a net weight of less than 92 ounces.

H. Free liquid weight. Free liquid weight in an individual polymeric tray shall be not more than 3.0 ounces.

I. Palatability and overall appearance. The finished product shall be equal to or better than the approved product standard in palatability and overall appearance.

J. Analytical requirements.

(1) Protein content. The protein content shall be not less than [redacted] percent.

(2) Fat content. The fat content shall be not greater than [redacted]5 percent.

(3) Salt content. The salt content shall be not less than 0.5 and not greater than 1.2 percent.

C-3 MISCELLANEOUS INFORMATION

THE FOLLOWING IS INFORMATION ONLY TO PROVIDE THE BENEFIT OF PAST GOVERNMENT EXPERIENCE. THIS IS NOT A MANDATORY CONTRACT REQUIREMENT.

A. Ingredients/formulation. Ingredients and formulation percentages for the eggs and potato may be as follows:

Ingredients	Percent by weight
Liquid or frozen whole eggs	60.046
Water	19.000
Dehydrofrozen diced potatoes, blanched	8.500
Vegetable oil	8.500
Modified waxy maize pre-gelatinized instant starch	3.000
Salt 1/	0.750
Ground white pepper	0.150
Citric acid	0.050
Dry or liquid annatto color (15% norbixen)	0.004

B. Ingredients/formulation. Ingredients and formulation percentages for the ground turkey sausage may be as follows:

Ingredient	Percent by Weight
Ground turkey	97.780
Salt 1/	1.500
Ground white pepper	0.230
Ground sage	0.140
Ground ginger	0.140
Ground nutmeg	0.070
Ground red pepper	0.070
Ground thyme	0.070

1/ The total amount of salt in the formulas may be adjusted as necessary to produce a product that complies with the finished product salt requirement.

NOTES:

INGREDIENTS.
Dehydrofrozen diced potatoes measuring 3/8 by 3/8 by 3/4 inches supplied by J.R.Simplot Company, Boise ID were used in this product.
The starch used was instant starch product number 5717 produced by National Starch and Chemical Company, Bridgewater, NJ.
Turkey used was boneless, skinless natural proportion turkey supplied by Hallsmith-Sysco.

Preparation of the diced potatoes:
The diced potatoes should be blanched to a weight of 1.5 times that of the starting weight.

Preparation of the turkey sausage:
Grind turkey meat through 1 inch grinder plate.
Blend with spices.
Regrind through 1/2 inch plate.
Blanch mixture to 85-90 percent yield and cool.

Preparation of the final product:
Frozen eggs should be tempered to a very slight frozen slushy consistency.
The dry ingredients except the starch should be mixed with a small amount of the water and added to the eggs.
The starch should be blended into the vegetable oil until smooth and added.
The blanched potatoes should be added.
The remaining water should be blended in.
The turkey sausage should be added and mixed well.
The product should be allowed to stand until thick enough for uniform filling.
The finished product should consist of 70 percent egg mixture and 30 percent of ground turkey sausage.

SECTION D

D-1 PACKAGING

A. Preservation. Product shall be filled into polymeric trays and the trays with protective sleeves shall conform to the requirements of section 3 of MIL-PRF-32004A, Packaging of Food in Polymeric Trays. Verification testing and inspection of trays, lids and sleeves shall be in accordance with Section 4 of MIL-PRF-32004A and the Quality Assurance Provisions of Section E of this Performance-based Contract Requirements document.

B. Polymeric tray closure. The filled, sealed, and processed tray shall be securely closed.

D-2 LABELING

A. Polymeric tray body. The polymeric tray body shall be clearly printed or stamped, in a manner that does not damage the tray, with permanent ink of any contrasting color, which is free of carcinogenic elements. One end of the polymeric tray (see figure 1 of MIL-PRF-32004A) shall be marked with the product name and number of portions. If the tray body end markings are not readily legible in low light conditions, a small, easily legible label shall be applied, but not over any existing tray markings. All other markings may be applied along the tray body side. To avoid erroneous marking of trays, the product name, lot number and filling equipment number shall be applied prior to processing. Additional tray marking may be applied before or after processing. 1/

Tray body markings shall include:

(1) Product name. Commonly used abbreviations may be used when authorized by the inspection agency.

(2) Tray code includes: 2/
Lot Number
Filling equipment identification number
Retort identification number
Retort cook number

1/ As an alternate method, tray body markings may be clearly printed or stamped onto the polymeric tray lid prior to processing, in a manner that does not damage the lid, with permanent ink of any contrasting color, which is free of carcinogenic elements, provided that the required markings are applied onto the tray body after processing.

2/ The lot number shall be expressed as a four digit Julian code. The first digit shall indicate the year of production and the next three digits shall indicate the day of the year (Example, 28 January 2002 would be coded as 2028). The Julian code shall represent the day the product was packaged into the tray and processed. Sublotting (when used) shall be represented by an alpha character immediately following the four digit Julian code. Following the four digit Julian code and the alpha character (when used), the other required code information shall be printed in the sequence as listed above.

B. Polymeric tray lid. The lid shall be clearly printed or stamped, in a manner that does not cause damage. Permanent ink of any contrasting color, which is free of carcinogenic elements shall be used. As an alternate labeling method, a pre-printed self-adhering 0.002 inch thick clear polyester label printed with indelible contrasting color ink may be used.

(1) Lid labeling shall include:
Product name
Ingredients
Net weight
Name and address of packer
Official establishment number (for example, EST 38) or a three letter code identifying the establishment

(2) Lid labeling shall also show the following statements:

TO HEAT IN WATER: Submerge unopened tray in water. Bring water to a boil. Simmer gently 35-40 minutes. Avoid overheating (tray shows evidence of bulging).

WARNING: Do not heat tray in oven.

TO TRANSPORT AFTER HEATING: Insert tray back into protective sleeve to protect during transport. If sleeve is unavailable, stack trays lid-to-lid with fiberboard pads in between.

CAUTION: Use care when opening as pressure may have been generated within the tray.

TO OPEN: Using a clean knife, cut the lidding around the inside perimeter of the tray seals.

SUGGESTION: Cut lid along 3 sides and fold over uncut portion. Fold back to keep unused portions protected.

YIELD: Serves 18 portions of approximately 2/3 cup each.

D-3 PACKING

A. Packing for shipment to ration assembler. Four filled, sealed, processed and sleeved polymeric trays shall be packed in a snug fitting fiberboard box conforming to style RSC-L, type CF, grade 275 of ASTM D 5118, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The sleeved trays shall be placed flat with the first two trays placed with the lids together and the next two trays with the lids together. The box shall be closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers.

D-4 UNITIZATION

A. Unit loads. Unit loads shall be as specified in DSCP FORM 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items.

D-5 MARKING

A. Shipping containers and unit loads. Marking of shipping containers and unit loads shall be as specified in DPSC FORM 3556 Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence.

SECTION E INSPECTION AND ACCEPTANCE

The following quality assurance criteria, utilizing ANSI/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection by Attributes, are required. When required, the manufacturer shall provide the certificate(s) of conformance to the appropriate inspection activity. Certificate(s) of conformance not provided shall be cause for rejection of the lot.

A. Definitions.

(1) Critical defect. A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending on the item; or a defect that judgment and experience indicate is likely to prevent the performance of the major end item, i.e., the consumption of the ration.

(2) Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

(3) Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

B. Classification of inspections. The inspection requirements specified herein are classified as follows:

(1) Product standard inspection. The first article or product demonstration model shall be inspected in accordance with the provisions of this document and evaluated for overall appearance and palatability. Any failure to conform to the performance requirements or any appearance or palatability failure, shall be cause for rejection of the lot. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

US Army Soldier & Biological Chemical Command
Soldiers System Ctr., Natick Soldier Center
Attn: AMSSB-RCF-F(N)
15 Kansas Street
Natick, MA 01760-5018

One lot shall be randomly selected during each calendar month of production. Two (2) sample units of each item produced shall be randomly selected from that one production lot. The two (2) sample units shall be shipped to Natick within five working days from

the end of the production month and upon completion of all USDA inspection requirements. The sample units will be evaluated for the characteristics of appearance, odor, flavor, texture and overall quality.

(2) Conformance inspection. Conformance inspection shall include the examinations and the methods of inspection cited in this section.

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements specified in Section C of this Performance-based Contract Requirements document utilizing the double sampling plans indicated in ANSI/ASQC Z1.4 - 1993. The lot size shall be expressed in trays. The sample unit shall be the contents of one tray. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 4.0 for major defects and 6.5 for minor defects. Defects and defect classifications are listed in table I below. The trays shall be heated in accordance with the heating instructions from the tray label prior to conducting any portion of the product examination.

TABLE I. Product defects 1/ 2/ 3/

Category		Defect
Major	Minor	
		Appearance
101		Product not eggs with turkey sausage and diced potatoes uniformly distributed throughout the product.
102		Bone or bone fragment measuring more than 0.3 inch in any dimension.
103		Product is not a typical yellow cooked egg color or slightly darker.
	201	Product shows visible lumps of starch.
	202	Presence of two or more air pockets or void areas measuring 1/2 inch or more in each of two separate dimensions.
	203	Presence of three or more air pockets or void areas measuring 1/4 inch or more in each of two separate dimensions.
	204	Sausage not a cooked ground turkey sausage color.
	205	Potato dices do not have a cooked potato color.
	206	Total weight of skin, cartilage, coarse connective tissue, tendons or ligaments, and discolored meat more than 1.0 ounce.
		Odor and flavor
104		The packaged food does not have an odor or flavor of cooked eggs with turkey sausage and potatoes.
		Texture
105		Egg product not moist or not moderately soft.
106		Egg product is rubbery.
	207	Turkey sausage not moist or not tender.
	208	Potato dices not slightly soft to slightly firm.
		Net weight
	209	Net weight of an individual polymeric tray is less than 92 ounces. 4/
		Free liquid weight
	210	Free liquid weight in an individual polymeric tray more than 3.0 ounces. 5/

1/ Presence of any foreign material such as, but not limited to dirt, insect parts, hair, wood, glass, metal, or mold, or any foreign odors or flavors such as, but not limited to burnt, scorched, rancid, sour, or stale shall be cause for rejection of the lot.

2/ Finished product not equal to or better than the approved product standard in palatability and overall appearance shall be cause for rejection of the lot.

3/ The requirement for the turkey sausage grind size and the potato dice size shall be verified by certificate of conformance.

4/ Sample average net weight less than 94 ounces shall be cause for rejection of the lot.

5/ To test for free liquid weight, open two opposite corners. Elevate the tray so one opened corner is at the bottom to allow the free liquid to escape and the other opened corner is at the top to allow air to enter. The tray shall be elevated and drained for one minute. The weight of the free liquid shall be reported to the nearest 0.1 ounce.

B. Methods of inspection.

(1) Commercial sterility. Incubate at 95^0F ± 5^0F for 10 days, unless otherwise specified by the inspection agency.

(2) Shelf life. The contractor shall provide a certificate of conformance that the product has a 3 year shelf life when stored at 80^0F. Government verification may include storage for 6 months at 100^0F or 36 months at 80^0F. Upon completion of either storage period, the product will be subjected to a sensory evaluation panel for appearance and palatability and must receive an overall score of 5 or higher based on a 9 point hedonic scale to be considered acceptable.

(3) Net weight. The net weight of the filled and sealed polymeric tray shall be determined by weighing each sample unit on a suitable scale tared with a representative empty polymeric tray and lid. Results shall be reported to the nearest 1 ounce.

(4) Starch lumps, air pockets, and void areas. From each sample polymeric tray of product, remove one 3 inch wide center slice (sliced lengthwise of the polymeric tray). Place center slice on edge and cut in half lengthwise. Inspect right inside surface for air pockets and void areas and starch lumps.

(5) Analytical. The sample to be analyzed shall be a one pound composite of three filled and sealed polymeric trays that have been selected at random from one production lot. The sample shall be prepared and analyzed in accordance with the latest edition of the Official Methods of Analysis of AOAC International (OMA). Test results shall be reported to the nearest 0.1 percent. Verification will be conducted through actual testing by a Government laboratory. Any result not conforming to the analytical requirements shall be cause for rejection of the lot.

E-6 QUALITY ASSURANCE PROVISIONS (PACKAGING AND PACKING MATERIALS, POLYMERIC TRAY)

A. Packaging and labeling.

(1) Polymeric tray testing. For purposes of clarification, the polymeric tray without the lid will be referred to as the “tray” and the polymeric tray with the lid shall be referred to as the “container”. The polymeric tray with protective sleeve and polymeric tray material shall be examined for the characteristics listed in table I of MIL-PRF-32004A, Packaging of Food in Polymeric Trays. Utilizing the single sampling plans indicated in ANSI/ASQC Z1.4 – 1993, the lot size, sample unit, and inspection level criteria are provided in table II below for each of the test characteristics. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot. For rough handling survivability at frozen temperature, polymeric tray survival rate shall be at least 85 percent.

TABLE II. Polymeric tray quality assurance criteria

Prior to processing

Characteristic	Lot size expressed in	Sample unit	Inspection level
Tray configurations and dimensions	Trays	1 tray	S-1
Oxygen gas transmission rate of tray	Trays	1 tray	S-1
Oxygen gas transmission rate of lid	Yards	1/2 yard	S-1
Water vapor transmission rate of tray	Trays	1 tray	S-1
Water vapor transmission rate of lid	Yards	1/2 yard	S-1
Camouflage	Containers	1 container	S-1

After processing

Characteristic	Lot size expressed in	Sample unit	Inspection level
Processing	Trays	1 tray	S-2
Rough handling survivability	Test containers	1 container	S-2
Protective sleeve	Containers	1 container	S-1
Residual gas	Containers	1 container	S-1
Closure seal	Containers	1 container	S-1
Internal pressure	Containers	1 container	S-1
Lid opening	Containers	1 container	S-1

(2) Examination of container. The container with protective sleeve removed shall be examined for the defects listed in table II of MIL-PRF-32004A and the labeling defects listed in table III below. The lot size shall be expressed in containers. The sample unit shall be one processed and labeled container. Utilizing the single sampling plans indicated in ANSI/ASQC Z1.4 – 1993, the inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major A defects, 2.5 for major B defects and 4.0 for minor defects. Two hundred sample units shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

TABLE III. Container labeling defects

Category		Defect
Major A	Minor	
101		Polymeric tray lid or body labeling missing, incorrect or illegible.
	201	When a pre-printed self adhering label is used, the label not adhering to tray lid (for example, label raised or peeled back from edge to corner) or presence of any areas of gaps along the perimeter of the label where the label is not properly adhered.

(3) Label adhesive examination. When self-adhering labels are used, the adhesive shall be tested in accordance with ASTM D 3330. In lieu of testing, a certificate of conformance (COC) shall be provided.

B. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table IV below. The lot size shall be expressed in shipping containers. Utilizing the single sampling plans indicated in ANSI/ASQC Z1.4 – 1993, the sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE IV. Shipping container and marking defects

Category		Defect
Major	Minor	
101		Marking omitted, incorrect, illegible, or improper size, location sequence or method of application.
102		Inadequate workmanship. 1/
	201	Arrangement or number of polymeric trays not as specified.

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, or bulged or distorted container.

C. Unitization.

(1) Unit load examination. The unit load shall be examined in accordance with the requirements of DSCP Form 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items. Any nonconformance shall be classified as a major defect and shall be cause for rejection of the lot.

SECTION J REFERENCE DOCUMENTS

DSCP FORMS

DSCP FORM 3507 Loads, Unit: Preparation of Semiperishable Subsistence Items
DPSC FORM 3556 Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence

MILITARY SPECIFICATIONS

MIL-PRF-32004A Packaging of Food in Polymeric Trays

GOVERNMENT PUBLICATIONS

Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder (21 CFR Parts 1-199) and (9 CFR Parts 1-391)

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ)

ANSI/ASQCZ1.4-1993 Sampling Procedures and Tables for Inspection by Attributes

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 1974 Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers
D 3330 Peel Adhesion of Pressure-Sensitive Tape
D 5118 Standard Practice for Fabrication of Fiberboard Shipping Boxes

AOAC INTERNATIONAL

Official Methods of Analysis of the AOAC International (OMA)

AMSSB-RCF—F(N)(Friel/4261) 24 October 2002

TO: DSCP-HRUT (Charya/73832)

SUBJECT: (ES03-004) Request for Document Changes, Protein and Fat requirement for Eggs with Turkey Sausage, Polymeric Tray, PCR-E-011; Eggs with Turkey Sausage, Tray Pack Can, PCR-E-010; SPO300-00-D-Z207; Stenger; DSCP-SS-03-00335

1. Date received: 18 October 2002
   Date due: 25 October 2002
   Date replied: 24 October 2002

2. Natick Soldier Center (NSC) concurs with the Contractor's request to reduce the protein requirement and to increase the fat requirement in the subject document.

   NSC discussed the issue of protein with the turkey sausage producer and was told that there would be a substantial cost savings if the product was produced with turkey thigh meat versus product made using turkey breast meat.

   There will be no adverse nutritional effect on the menu.

   Samples of eggs with turkey sausage produced with turkey thigh meat were submitted to Natick and evaluated as a technical review and also as a first article. This product was found to be very acceptable.

3. Natick submits the attached documents with electronic highlighted changes. Request DSCP implement changes to the subject documents for the UGR procurement until the documents are formally amended or revised.

C-2, J. (1), line 1, delete "11.0", insert "8.5"

C-2, J. (2), line 1, delete "11.0", insert "13.5"

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CF: NSC:
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